

DT09 Rec'd PCT/PTO 24 SEP 2004

SEQUENCE LISTING

<110> TAKARA BIO INC.

<120> Process for the preparation of lymphocyte having cytotoxic activity

<130> 03-021-PCT

<150> JP 2002-84414

<151> 2002-03-25

<160> 24

<210> 1

<211> 87

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-8

<400> 1

Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg

1 5 10 15

Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu

	20	25	30
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu			
	35	40	45
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu			
	50	55	60
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln			
	65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr			
	80	85	

<210> 2

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-9

<400> 2

Gly Leu Asp Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala			
1	5	10	15
Asn Ser Phe Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr			
	20	25	30
Gly Tyr Arg Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro			
	35	40	45
Arg Glu Asp Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr			

	50	55	60											
Asn	Leu	Thr	Pro	Gly	Thr	Glu	Tyr	Val	Val	Ser	Ile	Val	Ala	Leu
	65	70	75											
Asn	Gly	Arg	Glu	Glu	Ser	Pro	Leu	Leu	Ile	Gly	Gln	Gln	Ser	Thr
	80	85	90											

<210> 3

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-10

<400> 3

Val	Ser	Asp	Val	Pro	Arg	Asp	Leu	Glu	Val	Val	Ala	Ala	Thr	Pro
1				5				10					15	
Thr	Ser	Leu	Leu	Ile	Ser	Trp	Asp	Ala	Pro	Ala	Val	Thr	Val	Arg
				20				25					30	
Tyr	Tyr	Arg	Ile	Thr	Tyr	Gly	Glu	Thr	Gly	Gly	Asn	Ser	Pro	Val
				35				40					45	
Gln	Glu	Phe	Thr	Val	Pro	Gly	Ser	Lys	Ser	Thr	Ala	Thr	Ile	Ser
				50				55					60	
Gly	Leu	Lys	Pro	Gly	Val	Asp	Tyr	Thr	Ile	Thr	Val	Tyr	Ala	Val
				65				70					75	
Thr	Gly	Arg	Gly	Asp	Ser	Pro	Ala	Ser	Ser	Lys	Pro	Ile	Ser	Ile

	80	85	90
Asn Tyr Arg Thr			

<210> 4

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-12

<400> 4

Ala Ile Pro Ala Pro Thr Asp Leu Lys Phe Thr Gln Val Thr Pro			
1	5	10	15
Thr Ser Leu Ser Ala Gln Trp Thr Pro Pro Asn Val Gln Leu Thr			
	20	25	30
Gly Tyr Arg Val Arg Val Thr Pro Lys Glu Lys Thr Gly Pro Met			
	35	40	45
Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser Val Val Val Ser			
	50	55	60
Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser Val Tyr Ala Leu			
	65	70	75
Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly Val Val Thr Thr			
	80	85	90
Leu Glu			

<210> 5

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-13

<400> 5

Asn	Val	Ser	Pro	Pro	Arg	Arg	Ala	Arg	Val	Thr	Asp	Ala	Thr	Glu
1				5					10				15	
Thr	Thr	Ile	Thr	Ile	Ser	Trp	Arg	Thr	Lys	Thr	Glu	Thr	Ile	Thr
				30					35				40	
Gly	Phe	Gln	Val	Asp	Ala	Val	Pro	Ala	Asn	Gly	Gln	Thr	Pro	Ile
				45					50				55	
Gln	Arg	Thr	Ile	Lys	Pro	Asp	Val	Arg	Ser	Tyr	Thr	Ile	Thr	Gly
				60					65				70	
Leu	Gln	Pro	Gly	Thr	Asp	Tyr	Lys	Ile	Tyr	Leu	Tyr	Thr	Leu	Asn
				75					80				85	
Asp	Asn	Ala	Arg	Ser	Ser	Pro	Val	Val	Ile	Asp	Ala	Ser	Thr	
				90					95					

<210> 6

<211> 90

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named III-14

<400> 6

Ala	Ile	Asp	Ala	Pro	Ser	Asn	Leu	Arg	Phe	Leu	Ala	Thr	Thr	Pro
1				5					10					15
Asn	Ser	Leu	Leu	Val	Ser	Trp	Gln	Pro	Pro	Arg	Ala	Arg	Ile	Thr
				20					25					30
Gly	Tyr	Ile	Ile	Lys	Tyr	Glu	Lys	Pro	Gly	Ser	Pro	Pro	Arg	Glu
				35					40					45
Val	Val	Pro	Arg	Pro	Arg	Pro	Gly	Val	Thr	Glu	Ala	Thr	Ile	Thr
				50					55					60
Gly	Leu	Glu	Pro	Gly	Thr	Glu	Tyr	Thr	Ile	Tyr	Val	Ile	Ala	Leu
				65					70					75
Lys	Asn	Asn	Gln	Lys	Ser	Glu	Pro	Leu	Ile	Gly	Arg	Lys	Lys	Thr
				80					85					90

<210> 7

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> partial region of fibronectin named CS-1

<400> 7

Asp Glu Leu Pro Gln Leu Val Thr Leu Pro His Pro Asn Leu His
1 5 10 15
Gly Pro Glu Ile Leu Asp Val Pro Ser Thr
20 25

<210> 8

<211> 274

<212> PRT

<213> Human

<220>

<223> fibronectin fragment named C-274

<400> 8

Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg
1 5 10 15
Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu
20 25 30
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu
35 40 45
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu
50 55 60
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln

65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp		
80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe		
95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg		
110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp		
125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr		
140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg		
155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp		
170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu		
185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg		
200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		

	260	265	270
Thr Glu Ile Asp			

<210> 9

<211> 271

<212> PRT

<213> Human

<220>

<223> fibronectin fragment named H-271

<400> 9

Ala	Ile	Pro	Ala	Pro	Thr	Asp	Leu	Lys	Phe	Thr	Gln	Val	Thr	Pro
1				5					10					15
Thr	Ser	Leu	Ser	Ala	Gln	Trp	Thr	Pro	Pro	Asn	Val	Gln	Leu	Thr
				20					25					30
Gly	Tyr	Arg	Val	Arg	Val	Thr	Pro	Lys	Glu	Lys	Thr	Gly	Pro	Met
				35					40					45
Lys	Glu	Ile	Asn	Leu	Ala	Pro	Asp	Ser	Ser	Ser	Val	Val	Val	Ser
				50					55					60
Gly	Leu	Met	Val	Ala	Thr	Lys	Tyr	Glu	Val	Ser	Val	Tyr	Ala	Leu
				65					70					75
Lys	Asp	Thr	Leu	Thr	Ser	Arg	Pro	Ala	Gln	Gly	Val	Val	Thr	Thr
				80					85					90
Leu	Glu	Asn	Val	Ser	Pro	Pro	Arg	Arg	Ala	Arg	Val	Thr	Asp	Ala

	95	100	105
Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr Lys Thr Glu Thr			
	110	115	120
Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala Asn Gly Gln Thr			
	125	130	135
Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile			
	140	145	150
Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr			
	155	160	165
Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser			
	170	175	180
Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr			
	185	190	195
Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile			
	200	205	210
Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg			
	215	220	225
Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile			
	230	235	240
Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala			
	245	250	255
Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys Lys			
	260	265	270
Thr			

<210> 10

<211> 296

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named H-296

<400> 10

Ala	Ile	Pro	Ala	Pro	Thr	Asp	Leu	Lys	Phe	Thr	Gln	Val	Thr	Pro
1				5					10					15
Thr	Ser	Leu	Ser	Ala	Gln	Trp	Thr	Pro	Pro	Asn	Val	Gln	Leu	Thr
				20					25					30
Gly	Tyr	Arg	Val	Arg	Val	Thr	Pro	Lys	Glu	Lys	Thr	Gly	Pro	Met
				35					40					45
Lys	Glu	Ile	Asn	Leu	Ala	Pro	Asp	Ser	Ser	Ser	Val	Val	Val	Ser
				50					55					60
Gly	Leu	Met	Val	Ala	Thr	Lys	Tyr	Glu	Val	Ser	Val	Tyr	Ala	Leu
				65					70					75
Lys	Asp	Thr	Leu	Thr	Ser	Arg	Pro	Ala	Gln	Gly	Val	Val	Thr	Thr
				80					85					90
Leu	Glu	Asn	Val	Ser	Pro	Pro	Arg	Arg	Ala	Arg	Val	Thr	Asp	Ala
				95					100					105
Thr	Glu	Thr	Thr	Ile	Thr	Ile	Ser	Trp	Arg	Thr	Lys	Thr	Glu	Thr
				110					115					120
Ile	Thr	Gly	Phe	Gln	Val	Asp	Ala	Val	Pro	Ala	Asn	Gly	Gln	Thr

125	130	135
Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg Ser Tyr Thr Ile		
140	145	150
Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile Tyr Leu Tyr Thr		
155	160	165
Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val Ile Asp Ala Ser		
170	175	180
Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe Leu Ala Thr Thr		
185	190	195
Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro Arg Ala Arg Ile		
200	205	210
Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly Ser Pro Pro Arg		
215	220	225
Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr Glu Ala Thr Ile		
230	235	240
Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile Tyr Val Ile Ala		
245	250	255
Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys Lys		
260	265	270
Thr Asp Glu Leu Pro Gln Leu Val Thr Leu Pro His Pro Asn Leu		
275	280	285
His Gly Pro Glu Ile Leu Asp Val Pro Ser Thr		
290	295	

<211> 549

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named CH-271

<400> 11

Pro	Thr	Asp	Leu	Arg	Phe	Thr	Asn	Ile	Gly	Pro	Asp	Thr	Met	Arg
1				5					10					15
Val	Thr	Trp	Ala	Pro	Pro	Pro	Ser	Ile	Asp	Leu	Thr	Asn	Phe	Leu
				20					25					30
Val	Arg	Tyr	Ser	Pro	Val	Lys	Asn	Glu	Glu	Asp	Val	Ala	Glu	Leu
				35					40					45
Ser	Ile	Ser	Pro	Ser	Asp	Asn	Ala	Val	Val	Leu	Thr	Asn	Leu	Leu
				50					55					60
Pro	Gly	Thr	Glu	Tyr	Val	Val	Ser	Val	Ser	Ser	Val	Tyr	Glu	Gln
				65					70					75
His	Glu	Ser	Thr	Pro	Leu	Arg	Gly	Arg	Gln	Lys	Thr	Gly	Leu	Asp
				80					85					90
Ser	Pro	Thr	Gly	Ile	Asp	Phe	Ser	Asp	Ile	Thr	Ala	Asn	Ser	Phe
				95					100					105
Thr	Val	His	Trp	Ile	Ala	Pro	Arg	Ala	Thr	Ile	Thr	Gly	Tyr	Arg
				110					115					120
Ile	Arg	His	His	Pro	Glu	His	Phe	Ser	Gly	Arg	Pro	Arg	Glu	Asp
				125					130					135

Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr		
	140	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg		
	155	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp		
	170	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu		
	185	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg		
	200	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
	215	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
	230	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
	245	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
	260	270
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp		
	275	285
Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp		
	290	300
Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr		
	305	315
Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro		
	320	330

Asp Ser Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys		
	335	345
Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg		
	350	360
Pro Ala Gln Gly Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro		
	365	375
Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile		
	380	390
Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp		
	395	405
Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys		
	410	420
Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr		
	425	435
Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser		
	440	450
Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser		
	455	465
Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser		
	470	480
Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr		
	485	495
Glu Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg		
	500	510
Pro Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr		
	515	525

Glu Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser

530

535

540

Glu Pro Leu Ile Gly Arg Lys Lys Thr

545

<210> 12

<211> 574

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named CH-296

<400> 12

Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg

1

5

10

15

Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu

20

25

30

Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu

35

40

45

Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu

50

55

60

Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln

65

70

75

His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp

80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe		
95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg		
110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp		
125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr		
140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg		
155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp		
170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu		
185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg		
200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
260	265	270
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp		

275	280	285
Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp		
290	295	300
Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr		
305	310	315
Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro		
320	325	330
Asp Ser Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys		
335	340	345
Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg		
350	355	360
Pro Ala Gln Gly Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro		
365	370	375
Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile		
380	385	390
Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp		
395	400	405
Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys		
410	415	420
Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr		
425	430	435
Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser		
440	445	450
Ser Pro Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser		
455	460	465
Asn Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser		

470	475	480
Trp Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr		
485	490	495
Glu Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg		
500	505	510
Pro Gly Val Thr Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr		
515	520	525
Glu Tyr Thr Ile Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser		
530	535	540
Glu Pro Leu Ile Gly Arg Lys Lys Thr Asp Glu Leu Pro Gln Leu		
545	550	555
Val Thr Leu Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp		
560	565	570
Val Pro Ser Thr		

<210> 13

<211> 302

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named C-CS1

<400> 13

Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg

1	5	10	15
Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu			
	20	25	30
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu			
	35	40	45
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu			
	50	55	60
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln			
	65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp			
	80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe			
	95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg			
	110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp			
	125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr			
	140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg			
	155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp			
	170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu			
	185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg			

	200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe			
	215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys			
	230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg			
	245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg			
	260	265	270
Thr Glu Ile Asp Lys Pro Ser Asp Glu Leu Pro Gln Leu Val Thr			
	275	280	285
Leu Pro His Pro Asn Leu His Gly Pro Glu Ile Leu Asp Val Pro			
	290	295	300
Ser Thr			

<210> 14

<211> 367

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named CHV-89

<400> 14

Pro Thr Asp Leu Arg Phe Thr Asn Ile Gly Pro Asp Thr Met Arg

1	5	10	15
Val Thr Trp Ala Pro Pro Pro Ser Ile Asp Leu Thr Asn Phe Leu			
	20	25	30
Val Arg Tyr Ser Pro Val Lys Asn Glu Glu Asp Val Ala Glu Leu			
	35	40	45
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu			
	50	55	60
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln			
	65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp			
	80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe			
	95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg			
	110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp			
	125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr			
	140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg			
	155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp			
	170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu			
	185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg			

200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
260	265	270
Thr Glu Ile Asp Lys Pro Ser Met Asn Val Ser Pro Pro Arg Arg		
275	280	285
Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp		
290	295	300
Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val		
305	310	315
Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp		
320	325	330
Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr		
335	340	345
Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro		
350	355	360
Val Val Ile Asp Ala Ser Thr		
365		

<210> 15

<211> 368

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named CHV-90

<400> 15

Pro	Thr	Asp	Leu	Arg	Phe	Thr	Asn	Ile	Gly	Pro	Asp	Thr	Met	Arg
1				5					10					15
Val	Thr	Trp	Ala	Pro	Pro	Pro	Ser	Ile	Asp	Leu	Thr	Asn	Phe	Leu
				20					25					30
Val	Arg	Tyr	Ser	Pro	Val	Lys	Asn	Glu	Glu	Asp	Val	Ala	Glu	Leu
				35					40					45
Ser	Ile	Ser	Pro	Ser	Asp	Asn	Ala	Val	Val	Leu	Thr	Asn	Leu	Leu
				50					55					60
Pro	Gly	Thr	Glu	Tyr	Val	Val	Ser	Val	Ser	Ser	Val	Tyr	Glu	Gln
				65					70					75
His	Glu	Ser	Thr	Pro	Leu	Arg	Gly	Arg	Gln	Lys	Thr	Gly	Leu	Asp
				80					85					90
Ser	Pro	Thr	Gly	Ile	Asp	Phe	Ser	Asp	Ile	Thr	Ala	Asn	Ser	Phe
				95					100					105
Thr	Val	His	Trp	Ile	Ala	Pro	Arg	Ala	Thr	Ile	Thr	Gly	Tyr	Arg
				110					115					120
Ile	Arg	His	His	Pro	Glu	His	Phe	Ser	Gly	Arg	Pro	Arg	Glu	Asp
				125					130					135

Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr		
	140	145 150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg		
	155	160 165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp		
	170	175 180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu		
	185	190 195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg		
	200	205 210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
	215	220 225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
	230	235 240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
	245	250 255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
	260	265 270
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Asp Ala Pro Ser Asn		
	275	280 285
Leu Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp		
	290	295 300
Gln Pro Pro Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr Glu		
	305	310 315
Lys Pro Gly Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg Pro		
	320	325 330

	65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp			
	80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe			
	95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg			
	110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp			
	125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr			
	140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg			
	155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp			
	170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu			
	185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg			
	200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe			
	215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys			
	230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg			
	245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg			

260	265	270
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp		
275	280	285
Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp		
290	295	300
Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr		
305	310	315
Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro		
320	325	330
Asp Ser Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys		
335	340	345
Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg		
350	355	360
Pro Ala Gln Gly Val Val Thr Thr Leu Glu		
365	370	

<210> 17

<211> 457

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named CHV-179

<400> 17

Pro	Thr	Asp	Leu	Arg	Phe	Thr	Asn	Ile	Gly	Pro	Asp	Thr	Met	Arg
1				5					10					15
Val	Thr	Trp	Ala	Pro	Pro	Pro	Ser	Ile	Asp	Leu	Thr	Asn	Phe	Leu
				20					25					30
Val	Arg	Tyr	Ser	Pro	Val	Lys	Asn	Glu	Glu	Asp	Val	Ala	Glu	Leu
				35					40					45
Ser	Ile	Ser	Pro	Ser	Asp	Asn	Ala	Val	Val	Leu	Thr	Asn	Leu	Leu
				50					55					60
Pro	Gly	Thr	Glu	Tyr	Val	Val	Ser	Val	Ser	Ser	Val	Tyr	Glu	Gln
				65					70					75
His	Glu	Ser	Thr	Pro	Leu	Arg	Gly	Arg	Gln	Lys	Thr	Gly	Leu	Asp
				80					85					90
Ser	Pro	Thr	Gly	Ile	Asp	Phe	Ser	Asp	Ile	Thr	Ala	Asn	Ser	Phe
				95					100					105
Thr	Val	His	Trp	Ile	Ala	Pro	Arg	Ala	Thr	Ile	Thr	Gly	Tyr	Arg
				110					115					120
Ile	Arg	His	His	Pro	Glu	His	Phe	Ser	Gly	Arg	Pro	Arg	Glu	Asp
				125					130					135
Arg	Val	Pro	His	Ser	Arg	Asn	Ser	Ile	Thr	Leu	Thr	Asn	Leu	Thr
				140					145					150
Pro	Gly	Thr	Glu	Tyr	Val	Val	Ser	Ile	Val	Ala	Leu	Asn	Gly	Arg
				155					160					165
Glu	Glu	Ser	Pro	Leu	Leu	Ile	Gly	Gln	Gln	Ser	Thr	Val	Ser	Asp
				170					175					180
Val	Pro	Arg	Asp	Leu	Glu	Val	Val	Ala	Ala	Thr	Pro	Thr	Ser	Leu
				185					190					195

Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg		
	200	205 210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe		
	215	220 225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys		
	230	235 240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
	245	250 255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
	260	265 270
Thr Glu Ile Asp Lys Pro Ser Met Asn Val Ser Pro Pro Arg Arg		
	275	280 285
Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp		
	290	295 300
Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val		
	305	310 315
Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp		
	320	325 330
Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr		
	335	340 345
Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro		
	350	355 360
Val Val Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser Asn Leu		
	365	370 375
Arg Phe Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp Gln		
	380	385 390

	35	40	45
Ser Ile Ser Pro Ser Asp Asn Ala Val Val Leu Thr Asn Leu Leu			
	50	55	60
Pro Gly Thr Glu Tyr Val Val Ser Val Ser Ser Val Tyr Glu Gln			
	65	70	75
His Glu Ser Thr Pro Leu Arg Gly Arg Gln Lys Thr Gly Leu Asp			
	80	85	90
Ser Pro Thr Gly Ile Asp Phe Ser Asp Ile Thr Ala Asn Ser Phe			
	95	100	105
Thr Val His Trp Ile Ala Pro Arg Ala Thr Ile Thr Gly Tyr Arg			
	110	115	120
Ile Arg His His Pro Glu His Phe Ser Gly Arg Pro Arg Glu Asp			
	125	130	135
Arg Val Pro His Ser Arg Asn Ser Ile Thr Leu Thr Asn Leu Thr			
	140	145	150
Pro Gly Thr Glu Tyr Val Val Ser Ile Val Ala Leu Asn Gly Arg			
	155	160	165
Glu Glu Ser Pro Leu Leu Ile Gly Gln Gln Ser Thr Val Ser Asp			
	170	175	180
Val Pro Arg Asp Leu Glu Val Val Ala Ala Thr Pro Thr Ser Leu			
	185	190	195
Leu Ile Ser Trp Asp Ala Pro Ala Val Thr Val Arg Tyr Tyr Arg			
	200	205	210
Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro Val Gln Glu Phe			
	215	220	225
Thr Val Pro Gly Ser Lys Ser Thr Ala Thr Ile Ser Gly Leu Lys			

230	235	240
Pro Gly Val Asp Tyr Thr Ile Thr Val Tyr Ala Val Thr Gly Arg		
245	250	255
Gly Asp Ser Pro Ala Ser Ser Lys Pro Ile Ser Ile Asn Tyr Arg		
260	265	270
Thr Glu Ile Asp Lys Pro Ser Met Ala Ile Pro Ala Pro Thr Asp		
275	280	285
Leu Lys Phe Thr Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp		
290	295	300
Thr Pro Pro Asn Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr		
305	310	315
Pro Lys Glu Lys Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro		
320	325	330
Asp Ser Ser Ser Val Val Val Ser Gly Leu Met Val Ala Thr Lys		
335	340	345
Tyr Glu Val Ser Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg		
350	355	360
Pro Ala Gln Gly Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro		
365	370	375
Arg Arg Ala Arg Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile		
380	385	390
Ser Trp Arg Thr Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp		
395	400	405
Ala Val Pro Ala Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys		
410	415	420
Pro Asp Val Arg Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr		

425	430	435
Asp Tyr Lys Ile Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser		
440	445	450
Ser Pro Val Val Ile Asp Ala Ser Thr		
455		

<210> 19

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> fibronectin fragment named H-275-Cys

<400> 19

Met Ala Ala Ser Ala Ile Pro Ala Pro Thr Asp Leu Lys Phe Thr		
1	5	10
Gln Val Thr Pro Thr Ser Leu Ser Ala Gln Trp Thr Pro Pro Asn		
20	25	30
Val Gln Leu Thr Gly Tyr Arg Val Arg Val Thr Pro Lys Glu Lys		
35	40	45
Thr Gly Pro Met Lys Glu Ile Asn Leu Ala Pro Asp Ser Ser Ser		
50	55	60
Val Val Val Ser Gly Leu Met Val Ala Thr Lys Tyr Glu Val Ser		
65	70	75

Val Tyr Ala Leu Lys Asp Thr Leu Thr Ser Arg Pro Ala Gln Gly			
	80	85	90
Val Val Thr Thr Leu Glu Asn Val Ser Pro Pro Arg Arg Ala Arg			
	95	100	105
Val Thr Asp Ala Thr Glu Thr Thr Ile Thr Ile Ser Trp Arg Thr			
	110	115	120
Lys Thr Glu Thr Ile Thr Gly Phe Gln Val Asp Ala Val Pro Ala			
	125	130	135
Asn Gly Gln Thr Pro Ile Gln Arg Thr Ile Lys Pro Asp Val Arg			
	140	145	150
Ser Tyr Thr Ile Thr Gly Leu Gln Pro Gly Thr Asp Tyr Lys Ile			
	155	160	165
Tyr Leu Tyr Thr Leu Asn Asp Asn Ala Arg Ser Ser Pro Val Val			
	170	175	180
Ile Asp Ala Ser Thr Ala Ile Asp Ala Pro Ser Asn Leu Arg Phe			
	185	190	195
Leu Ala Thr Thr Pro Asn Ser Leu Leu Val Ser Trp Gln Pro Pro			
	200	205	210
Arg Ala Arg Ile Thr Gly Tyr Ile Ile Lys Tyr Glu Lys Pro Gly			
	215	220	225
Ser Pro Pro Arg Glu Val Val Pro Arg Pro Arg Pro Gly Val Thr			
	230	235	240
Glu Ala Thr Ile Thr Gly Leu Glu Pro Gly Thr Glu Tyr Thr Ile			
	245	250	255
Tyr Val Ile Ala Leu Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile			
	260	265	270

Gly Arg Lys Lys Thr Cys

275

<210> 20

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> primer 12S

<400> 20

aaaccaatggc agctagcgct attccatgcac caactgac

38

<210> 21

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> primer 14A

<400> 21

aaaggatccc taactagtct ttttccttcc aatcag

36

<210> 22

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> primer Cys-A

<400> 22

aaaagcggcc gctagcgcaa gccatgggtct gtctcctgtg 40

<210> 23

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> primer Cys-S

<400> 23

aaaagcggcc gcactagtgc atagggatcc ggctgagcaa c 41

<210> 24

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Designed peptide based on matrixprotein derived from influenza virus

<400> 24

Gly Ile Leu Gly Phe Val Phe Thr Leu

1

5